

SOME NEW FLIES OF THE GENUS BATHYPOGON LOEW

(DIPTERA, ASILIDAE)

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This paper presents the descriptions of several new species of *Bathypogon* Loew, a member of the Dasyopogoninae, which is restricted to the lower part of South America and to Australia.

***Bathypogon ochraceus*, new species**

A quite small species characterized by the pale brownish or yellowish red face, tibiae, posterior half of legs. The tarsi are pale ochraceous. The first segment of the antenna is yellowish. Terminalia with slender, needle-like processes on the basal plate. Length 11-12 mm.

Male. Head: The occiput, front and vertex black in ground color; the lower occiput with grey pollen, the upper occiput and front and vertex with yellowish brown pollen, paler on the front. The face is light reddish to yellowish brown in ground color with quite pale brownish yellow pubescence and similarly colored bristles on the lower three-fourths of the face; the elevation is gentle and low. The first antennal segment is pale yellowish brown, the second medium brown, the third dark brown. The palpi are light red in color to medium brown in color. Proboscis more or less reddish on the base. All bristles of head are pale.

Thorax: The mesonotum is black down the middle and laterally, rarely reddish along the sides. In typical specimens only the humeri are light reddish brown. The central part of the mesonotum has olive brown pollen; pollen along the sides brownish yellow. Pleuron chiefly reddish in ground color with a large, diffuse, central, black spot in the middle of the mesopleuron, anteroventral half of sternopleuron and ventral half of hypopleuron; pollen brownish yellow. The complement of thoracic bristles consists of 1 post humeral, 2 notopleural, 1 supraalar, 2 postalar, 2 scutellar pairs, 3 postdorsocentral and 2 or 3 differentiated meta-pleural bristles.

Legs: The anterior surface of the anterior and middle femora and lateral surface of hind femora are dark reddish brown, their remainder light brownish red. The posterior tibia laterally are dark brown, the anterior tibia and middle tibia light brown anteriorly and pale brownish red or orange posteriorly. Tarsi pale brown.

Wings: The wings are dilutely tinged with brown. The lower end vein of the discal cell makes a strong angle with the lower end vein of the fourth posterior cell. Veins dark brown.

Abdomen: The abdomen is reddish brown, rather dark dorsally, becoming pinkish brown along the lateral margins. The dorsal pollen is medium brown with a golden cast, the lateral pollen pale pinkish brown. The terminalia light reddish brown, a little darker in the middle of the superior forceps and again laterally at the base of the basal plate. The ventral process of the hypandrium, while small, is quite characteristic and consists of a slender, erect, needle-like process.

Female. The female is similar to the male, including the color of the abdomen. The last 2 tergites are entirely shining; the third tergite is widely shining and without pollen dorsally. All of the pollen in the female is pale, yellowish brown.

Type.—Male, Owieandana, North Flinders Range, collected by Hale and Tindale; allotype, female, same data; paratype, male, same data. No dates given. The types are in the South Australian Museum, Adelaide; paratype in the collection of the author.

***Bathypogon macrodonturus*, new species**

A small species characterized by the general reddish coloration, the rather strongly thickened femora, the pale bristles. The first 2 antennal segments are pale, and there is a flared triangular process on the basal plate. Length 15 mm.

Male. Head: The occiput, front and vertex are black in ground color, the face and cheeks light brownish red. The pollen of the head is everywhere deep reddish to golden brown, except on the lower occiput where it is paler. The pubescence of the face is pale, reddish yellow. The first 2 segments of the antenna are light brownish orange, the extreme apex of the second a little darker, the third segment missing. The face has a comparatively strong elevation, extending over nearly five-sixths of the face; beginning near the antenna it bears numerous, long, stout, brownish bristles. Palpus unusually slender and small, reddish brown in color. Base of proboscis reddish. Occipital bristles yellowish brown.

Thorax: The thorax is black broadly down the middle, the sides widely reddish, including the humerus, a short border posterior to the humerus and a more narrow medial border. The pollen of the mesonotum is reddish brown, more yellowish laterally. The pleuron is reddish brown, a little darker on the anterior half of the mesopleuron, which is perhaps nearly blackish; there is a large, blackish triangle on the sternopleuron, a small, dark rectangle on the hypopleuron; pleural pollen brownish yellow. The complement of bristles on the thorax consists of 1 posthumeral, 2 notopleural, 1 supraalar, 2 postalar, 3 pairs of scutellar bristles, 4 postdorsocentral, and 3 weakly differentiated metapleural bristles; all thoracic bristles are brownish yellow. Scutellum is sepia brown on the disc, pale reddish along the margin.

Legs: The legs are unusually stout, reddish brown with the anterior surface of the anterior and middle femora brownish to black, except at the apex, and this color leaves the whole apex and ventral portion of the apical half obliquely reddish. Hind femur blackish laterally and along the dorsal margin from base to apex, leaving the medioventral and ventrolateral surfaces red. The hind tibia dark reddish brown laterally; all the remaining tibiae and tarsi pale brownish red. Pile and bristles of legs light reddish brown. The claws are only moderately sharp and red on the basal third.

Wings: The wings are subhyaline, tinged with pale, reddish brown, especially on the apical fourth. The lower end vein of the discal cell makes a strong angle with the end vein of the fourth posterior cell. Veins dark reddish brown, the first 3 more yellowish brown.

Abdomen: The abdomen is reddish brown, slightly darker across the middles of the second and third tergites. All of the pollen light, reddish brown. Terminalia reddish brown, a little darker on the convex portion of the superior forceps. Hypandrium with a pair of strong, triangular, bluntly pointed, thin, lappet-like processes.

Type.—Male, Mullewa, West Australia, collected by Miss F. May. No date given. Type in the South Australian Museum, Adelaide.

Bathypogon cinereus, new species

A small, black and dark brown species with greyish white pollen. The bristles in part are pale. The bristles of the vertex are black. The bristles of upper occiput, posterior mesonotum and scutellum, most of the tarsal bristles, and the upper tibial bristles are dark sepia brown. Length 15 mm.

Male. Head: The head is black in ground color, except on the face, which is brown. The pollen is greyish white, the facial pubescence white with a yellowish to a greyish tint and the pollen on the upper half of the front somewhat yellowish. The suborbital bristles on the upper half of the occiput are black and white intermixed; there is a cluster of postvertical bristles on each side, which contains eight bristles that are dark brown in color. The bristles of the vertex are nearly black; frontal bristles dark brown. Lateral bristles of the face white, the medial bristles pale brownish white or yellow. The first segment of the antenna and the base of the second and the basal fourth of the third pale yellowish brown. The rim of the first segment and the remainder of the second segment is dark brown; the remainder of the third segment brownish black. Third segment short and strongly dilated. Pile of antenna and of the black palpus and proboscis white.

Thorax: The mesonotum is black with the humeri, and the lateral margins, and the apical third of the scutellum dark reddish brown. The mesonotal pile is chiefly black with a patch of medial white pile on the anterior margin, again before the scutellum and on the sides of the post calli. The mesonotal pollen is sepia brown, becoming grey white on the humeri and this lateral stripe is conspicuously contrasted. From above, the medial stripe of the mesonotum is scarcely evident; viewed anteriorly it is distinct but narrow. Pleuron is black with 1 or more quite dark brown areas, including the lower propleuron, posterior mesopleuron, pteropleuron and metapleuron, and much of the hypopleuron. The pollen is greyish white. Metapleural bristles are pale with only 2 strong, differentiated elements. The mesonotal complement of bristles consists of 1 posthumeral, 2 notopleural; the posthumeral and the lower notopleural bristles are light brown in color and all remaining bristles of the mesonotum and scutellum are dark sepia brown and consist of 1 supraalar, 2 postalar, 2 scutellar pairs and 4 or 5 strong, long, postdorsocentral bristles.

Legs: The legs are black and white pilose with the following parts quite dark brown: Medial and ventral surface of the hind femur, posterior and ventral surface of the anterior and middle femora, medial surface of the hind tibia. The posterior surfaces of the remaining tibiae are only a little lighter in color. Tarsi quite dark brown. The base of the claws reddish. Tarsal bristles and the dorsal tibial bristles quite dark brown; remaining bristles chiefly whitish.

Wings: The wings are subhyaline, tinged with grey. The apex is darker and with villi. The lower end vein of the discal cell and the end vein of the fourth posterior cell nearly aligned.

Abdomen: The abdomen is black dorsally with thin, scanty, sepia pollen and brownish white pile. The lateral margins of the tergites are reddish brown and this reddish brown color is extended inward along the posterior margins for a short distance. The terminalia are black, the apices of the superior forceps divergent and the hypandrium has a pair of protuberances which in lateral view appear as sharp, curved, sickle-like hooks, but posteriorly appear as rounded, bluntly pointed, scoop-like structures.

Type.—Male, collected 37 miles southeast of Perth on the Brookton Highway, January 6, 1954 by F. M. Hull. The type is in the collection of the author.

BOOK REVIEW

THE TARANTULA, by William J. Baerg. University of Kansas Press, Lawrence, 89 pages, 17 figures. \$3.00.

From 35 years' association with tarantulas, visiting them at their homes in the field, entertaining them as pets in his own home or his laboratory at the University of Arkansas, Dr. Baerg in this book gives us an intimate account of the nature, habits, and life history of the American spiders known as tarantulas. Since the life span of these spiders may be as long as 24 years, the author says the subject is not taken up by many researchers, and he adds that he is perhaps the only one who has followed the development of a tarantula from its infancy to old age.

It must, of course, be understood that the spider first called a tarantula is a European wolf spider, *Lycosa tarantula*, named from the city of Taranto in Italy. The bite of this spider was reputed to produce a physical condition called tarantism, which was followed by sure death unless the victim was exposed to some particular musical tune, which, when heard, induced wild, uncontrolled dancing, succeeded by exhaustion, but reprieve from death. This is a strange piece of fiction. The spiders we know as tarantulas, of which Baerg gives us a trustworthy account, belong to the Mygalomorphae, which includes also the trapdoor spiders.

The best way to review this book will be to give an abstract of the life of the tarantula as the author describes it. Both sexes live under stones or in holes in the ground and take from 10-13 years to reach maturity. They feed on most any available insects, but it appears that if the diet of the female lacks beetles she cannot produce eggs. The male tarantula, after a final moult, is mature and is now provided with bulbs on the ends of his pedipalps, which are essential for his sole business of inseminating the female. First, however, he must fill the bulbs with sperm, which he does in the manner of all spiders by spinning a flat web, on the under side of which he ejects a drop of sperm. Then getting on top of the web he takes the sperm into his pedipalp bulbs. The process is best followed in observation jars. Males confined with females may mate immediately after filling their receptacles. One caged male made 17 sperm webs in six weeks, and mated 12 times with five females. In the field, however, the males travel far and wide in search of females. When a receptive female is encountered a courtship performance is begun in which the male raises the female to an upright position so that he can thrust his sperm-filled bulbs into her receptacles on the base of the abdomen. Mating takes place in the fall and after one season the males are exhausted and soon die.

The inseminated female retires to her den and there spends the winter. On emerging in the spring she must construct a cocoon for holding her prospective eggs. Cocoon-spinning itself is an arduous task, and the author devotes over four pages to a description of it. Briefly, a hammocklike sheet of silk is first laid